

Dr. Duke's Phytochemical and Ethnobotanical Databases

Chemicals found in *Frangula purshiana*

| Activities Count | Chemical                     | Plant Part     | Low PPM | High PPM | StdDev               | Reference Citation   |
|------------------|------------------------------|----------------|---------|----------|----------------------|--|
| 24               | ALOE-EMODIN                  | Bark           |         |          |                      | --   |
| 24               | ALOE-EMODIN                  | Tissue Culture |         |          |                      | --   |
| 12               | ALOIN                        | Plant          |         |          |                      | --   |
| 5                | ALUMINUM                     | Bark           | 27.0    | 99.0     | -0.42073897270651045 | --   |
| 6                | ANTHRAQUINONES               | Bark           | 60000.0 | 100000.0 | 1.0                  | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.                              |
| 112              | ASCORBIC-ACID                | Bark           |         | 0.0      | -1.0104899665727316  | --   |
| 6                | BARBALOIN                    | Bark           |         |          |                      | --   |
| 53               | BETA-CAROTENE                | Bark           | 13.0    | 46.0     | 2.1374028017190314   | --   |
| 28               | CALCIUM                      | Bark           | 4100.0  | 14800.0  | -0.3701186348289897  | --   |
| 1                | CASANTHRANOL                 | Bark           |         |          |                      | --   |
| 1                | CASCAROSIDE-A                | Bark           |         |          |                      | --   |
| 24               | CHROMIUM                     | Bark           | 0.2     | 0.6      | -0.5240392018021011  | --   |
| 6                | CHRYSOPHANIC-ACID            | Plant          |         |          |                      | --   |
| 6                | CHRYSOPHANIC-ACID            | Tissue Culture |         |          |                      | --   |
| 6                | CHRYSOPHANIC-ACID            | Bark           |         |          |                      | --   |
| 2                | CHRYSOPHANIC-ACID-9-ANTHRONE | Plant          |         |          |                      | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| 10               | CHRYSOPHANOL                 | Bark           |         |          |                      | --   |
| 2                | COBALT                       | Bark           | 3.2     | 11.6     | -0.18574693845267193 | --   |
| 58               | EMODIN                       | Tissue Culture |         |          |                      | --   |
| 58               | EMODIN                       | Bark           |         |          |                      | --   |
| 58               | EMODIN                       | Bl             |         |          |                      | --   |

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|------------------|----------------|----------------|---------|----------|----------------------|--|
| 58               | EMODIN         | Plant          |         |          |                      | Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989. |
| 15               | FIBER          | Bark           |         | 310000.0 | 1.4973444643886513   | Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.  |
| 1                | FRANGULAEMODIN | Bark           |         |          |                      | --   |
| 1                | FRANGULIN      | Bark           |         |          |                      | --   |
| 6                | IRON           | Bark           | 6.4     | 23.0     | -0.8041825931162928  | --   |
| 27               | LINOLEIC-ACID  | Plant          |         |          |                      | --   |
| 65               | MAGNESIUM      | Bark           | 440.0   | 1590.0   | -0.10911131301072557 | --   |
| 15               | MALIC-ACID     | Plant          |         |          |                      | --   |
| 14               | MANGANESE      | Bark           | 0.4     | 1.4      | -0.6672097230657966  | --   |
| 6                | MYRISTIC-ACID  | Plant          |         |          |                      | --   |
| 39               | NIACIN         | Bark           | 8.0     | 29.0     | -0.5491524863663554  | --   |
| 4                | PHOSPHORUS     | Bark           | 158.0   | 570.0    | -0.5349997224798418  | --   |
| 5                | PHYSCION       | Tissue Culture |         |          |                      | --   |
| 5                | PHYSCION       | Bark           |         |          |                      | --   |
| 14               | POTASSIUM      | Bark           | 1103.0  | 3980.0   | -0.43722012313816594 | --   |
| 15               | RIBOFLAVIN     | Bark           |         | 0.0      | -1.033653783963848   | --   |
| 60               | SELENIUM       | Bark           | 0.3     | 1.1      | -0.4642594780283318  | --   |
| 4                | SILICON        | Bark           |         |          |                      | --   |
| 1                | SODIUM         | Bark           | 26.0    | 93.0     | -0.408100271312514   | --   |
| 6                | SYRINGIC-ACID  | Plant          |         |          |                      | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.                                     |
| 41               | TANNIC-ACID    | Plant          |         |          |                      | --   |

| Activities Count | Chemical | Plant Part | Low PPM | High PPM | StdDev              | Reference Citation   |
|------------------|----------|------------|---------|----------|---------------------|--|
| 35               | TANNIN   | Plant      |         |          |                     | --   |
| 31               | THIAMIN  | Bark       |         | 0.0      | -0.6585046078685182 | Pedersen, M. 1987.<br>Nutritional Herbology.<br>Pederson Publishing.<br>Bountiful, Utah. 377 pp. |
| 4                | TIN      | Bark       | 1.4     | 5.1      | -0.9625249451887514 | --   |
| 77               | ZINC     | Bark       |         |          |                     | --   |